



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

3-14-84

MAR 14 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 84-OR-04. Proposed Section 18 exemption for the use of chlorothalonil on wheat in Oregon.

FROM: Ed Zager, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TRHU: Charles L. Trichilo, Chief
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TO: Emergency Response Section
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

The Oregon Department of Agriculture requests a Section 18 exemption for the use of chlorothalonil to control Septoria glume blotch in wheat grown in Oregon. A maximum of 130,000 lbs. will be used to treat an estimated 62,5000 acres of wheat.

A Section 18 exemption request for a similar use was reviewed in a 4/9/82 memo by R. Loranger.

PP#3F2875 proposing a tolerance of 0.1 ppm for residues of chlorothalonil and its metabolite 4-hydroxy-2,5,6-tetrachloroisophthalonitrile in or on wheat was withdrawn by the petitioner.

The proposed use of Bravo 500 would permit two aerial applications at the rate of 0.78-1.04 lb. act/A in 5 gal. spray/A with a 45 day PHI.

The metabolism of chlorothalonil in plants has been reviewed in connection with earlier petitions (PP#7F0599, 1F1024, 2F1230, 4E1502, 6F1799 and 6G1871). For the purposes of this Section 18 exemption, we consider the residue of concern in wheat grain to be chlorothalonil and its metabolite 4-hydroxy-2,5,6-tetrachloroisophthalonitrile and the two impurities HCB and PCBN discussed below.

Residue data reflecting chlorothalonil applications to grain were reviewed in connection with PP#3F2875 (M. Kovacs, 11/7/83). Residue experiments (35) were conducted in MD, IL, TN, AL, BA, MN, LA, NE, AK, SD, ND, VA, OK, TX and OR. Wheat received 1-3 applications at the rate of 0.52 - 2.60 lbs. act/A. PHI's ranged from 22-77 days.

Residues of chlorothalonil and its 4-OH metabolite on wheat grain ranged from <0.01-0.06 ppm and <0.03-0.05 ppm, respectively. We note that untreated check samples showed residues of <0.01-0.047 and <0.01-0.03 ppm for chlorothalonil and its 4-H metabolite, respectively. The highest residue of chlorothalonil found in the above studies reflected a 0.75X treatment rate and a 30 day PHI while the highest residue of the 4-OH metabolite reflected an exaggerated dosage of 6.75 lb. act/A and a 34 day PHI. (Acc. No. 071550)

Thus, we conclude that no detectable residues of chlorothalonil plus its hydroxy metabolite will be present in wheat grain. Based on the control values the detectability limit for combined residues is 0.1 ppm.

Two impurities have been reported as contaminants in technical chlorothalonil: hexachlorobenzene (HCB) and pentachlorobenzonitrile (PCBN). An analysis of 308 batches of chlorothalonil showed that most contained

in the batches analyzed.

Essentially, no residues of PCBN (<0.009) or HCB (<0.004) were detected in 318 wheat grain samples following applications of Bravo 500. While detectable residues of HCB and PCBN, 0.03 ppm and 0.09 ppm, respectively were found in wheat straw these will not be a problem since we, as discussed below, are recommending for the issuance of this Section 18 exemption contingent upon feeding restrictions for wheat forage, hay and straw.

A wheat processing study submitted with PP#3F2875 showed no concentration of residues of chlorothalonil PCNB or HCB in flour, bran and shorts. While the study was judged inadequate for the purposes of the permanent tolerance proposal (See the aforementioned review), we would not expect detectable residues in the wheat processing fractions based on the absence of residues in grain.

Since no adequate residue data are available for chlorothalonil wheat forage, wheat hay and wheat straw, feeding restrictions for these commodities will be needed. Such restrictions have been found practical for this limited emergency use in the past. (R. Loranger, 4/9/82)

IMPURITY INFO IS NOT INCLUDED

In meat, milk and eggs no detectable residues will be found if the feeding restrictions in the previous paragraph are imposed. Although wheat grain may comprise 50% of the cattle diet and 70% of the poultry diet, no residue problem is expected since that feed item will not have detectable residues.

Conclusions

1. No detectable (<0.1 ppm) combined residues of chlorothalonil plus its hydroxy metabolites will be present in wheat grain.
2. No detectable residues of PCBN (<0.009 ppm) or HCB (<0.004 ppm) are expected in wheat grain from this use.
3. A label restriction against feeding treated wheat forage, hay and straw to livestock is needed due to the lack of adequate residue data for these commodities. Such a restriction would be practical for this limited emergency use.
4. Provided the restriction listed in Conclusion 3 is imposed, no detectable residues of chlorothalonil, its metabolites and PCNB and HCB will occur in meat, milk and eggs.
5. The method of enforcement for determination of chlorothalonil and its 4-hydroxy-metabolite is contained in PAM II.

The method entitled: "Residues of Chlorothalonil, 4-hydroxy-2,5,6-trichloro-isophthalonitrile, hexachlorobenzene and pentachloronitrobenzonitrile on wheat grain" (PP#3F2875) may be used to measure residues of the two impurities PCBN and HCB.

Recommendation

TOX considerations permitting and contingent upon imposition of a restriction against feeding treated wheat forage, hay and straw to livestock we recommend for the proposed emergency exemption. An administrative agreement should be made with FDA concerning the legal status of the treated wheat in commerce.

cc:R.F.,
Circu,
Reviewer,
Chlorothalonil SF,
Section 18 SF
RDI:R.D.Schmitt:RDS:3/12/84:E.Zager:EZ:3/12/84
TS-769:E.Zager:gmk:RM810:CM#2:3/13/84